

IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1. – 58. (Canceled)

59. (Currently Amended) A method for detecting the pitch values of notes in a musical sound signal, comprising the steps of:

~~(a) isolating notes~~ identifying one or more voiced segments in the sound signal using an energy function of the sound signal;

~~(b) dividing~~ applying a gradient-based processing to said [[notes]] voiced segments for dividing each voiced segment into one or more groups of blocks notes; and

~~(c) deriving pitch values of~~ the respective notes in the sound signal said blocks; and

~~(d) deriving the pitch values of said notes by means of clustering on said pitch values of said blocks.~~

60. (Currently Amended) A method according to claim 59, wherein the process of ~~isolating~~ dividing the voiced segments into notes uses note markers to do so.

61. (Currently Amended) A method according to claim ~~[[59]]~~ 60, wherein the process of deriving the pitch values of the respective notes comprises dividing portions of each voiced segment between the note markers into blocks ~~in a group~~ are of equal length.

62. (Currently Amended) A method according to claim ~~[[59]]~~ 61, wherein each ~~[[group]]~~ portion contains the same number of blocks.

63. (Currently Amended) A method according to claim 59, wherein the process of deriving the pitch values of the respective notes comprises applying k-mean clustering on ~~the block~~ pitch values derived for the blocks between the note markers.

64. (Currently Amended) A method according to claim 59, further comprising the step of ~~(e)~~ rounding the ~~detected~~ derived pitch values of the respective notes to the nearest note values.

65. (Currently Amended) A method according to claim 59, wherein the ~~note-isolating step~~ identifying of the voiced segments is performed based on a determination of silences in the ~~musical~~ sound signal.

66. (Canceled)

67. (Currently Amended) A method according to claim ~~[[63]]~~ 59, further comprising the step of extracting notes from said pitch values to create note descriptors.

68. (Currently Amended) A method according to claim 59, wherein the ~~musical~~ sound signal is ~~digitised~~ digitized.

69. (Currently Amended) A method according to claim 59, wherein the ~~musical~~ sound signal is an audio signal of a sound produced by a person.

70. (Previously Presented) A method according to claim 69, wherein the sound comprises one or more of the group of: humming, singing and whistling at least a portion of a piece of music.

71. (Previously Presented) Apparatus for use in use in detecting the pitch values of notes in a musical sound signal, operable according to the method of claim 59.

72. (Currently Amended) Apparatus for detecting the pitch values of notes in a musical sound signal, comprising:

means for identifying one or more voiced segments in the sound signal using an energy function of the sound signal;

means for applying a gradient-based processing to said voiced segments for dividing each voiced segment into one or more notes; and

means for deriving pitch values of the respective notes in the sound signal

~~(a) note isolating means for isolating notes in the sound signal;~~

~~(b) pitch value dividing means for dividing said notes into one or more groups of blocks;~~

~~(c) block pitch value deriving means for deriving pitch values of said blocks;~~
and

~~(d) note pitch value deriving means for deriving the pitch values of said notes by means of clustering on said pitch values of said blocks.~~

73. (Currently Amended) Apparatus according to claim 72, wherein said ~~note isolating~~ means for applying a gradient-based processing uses note markers to isolate notes.

74. (Currently Amended) Apparatus according to claim ~~[[72]]~~ 73, wherein the means for deriving the pitch values of the respective notes divides portions of each voiced segment between the note markers into the blocks in a group are of equal length.

75. (Currently Amended) Apparatus according to claim ~~[[72]]~~ 74, wherein each ~~[[group]]~~ portion contains the same number of blocks.

76. (Currently Amended) Apparatus according to claim 72, wherein the ~~note pitch value deriving~~ means for deriving the pitch values of the respective notes is operable

to apply k-mean clustering on ~~the~~ block pitch values derived for the blocks between the note markers.

77. (Currently Amended) Apparatus according to claim 72, further comprising ~~rounding~~ means for rounding the ~~detected~~ derived pitch values of the respective notes to the nearest note values.

78. (Currently Amended) Apparatus according to claim 72, wherein the ~~note isolating~~ means for identifying the voiced segments operates based on a determination of silences in the ~~musical~~ sound signal.

79. (Canceled)

80. (Currently Amended) Apparatus according to claim ~~[[76]]~~ 72, further comprising ~~note extracting~~ means for extracting notes from said pitch values to create note descriptors.

81. (Previously Presented) Apparatus according to claim 72, operable to process a digital musical sound signal.

82. (Previously Presented) Apparatus according to claim 72, operable to process a musical sound signal being an audio signal of a sound produced by a person.

83. (Previously Presented) Apparatus according to claim 82, wherein the sound comprises one or more of the group of: humming, singing and whistling at least a portion of a piece of music.

84. – 86. (Canceled)